REMARKS

With entry of the instant amendment, claims 1, 3, 4, 24, 26, 30, and 32 have been amended; claims 5, and 19-23 have been cancelled; and new claims 43-47 have been added. Claims 2, 6-18, 25, 27-29, 31, and 38-42 were previously cancelled; and claims 34 and 35 have been withdrawn by the Examiner. Claims 1, 3, 4, 24, 26, 30, 32, 33, 36, 37, and 43-47 are therefore under examination.

Cancellation of subject matter is without prejudice to subsequent revival for prosecution in a continuation or divisional application.

The amendments to the claims add no new matter. Support can be found throughout the specification and claims as filed.

New claims 43-47 are drawn to the subject matter of cancelled claims 19-23, which relate to methods of detecting the presence or absence of a mutation in a *MEN1* gene. The new claims have been introduced to simplify the amendments. Support for claims 43-47 can be found, *e.g.,* in the application at page 18, lines 3-19.

The Examiner has reopened prosecution. The rejections are addressed in the order presented in the Office Action.

Rejection under 35 U.S.C. § 112, first paragraph-enablement

Claims 1, 5, 30, 33, 36, and 37 are rejected as allegedly not enabled for an isolated or recombinant nucleic acid encoding menin, SEQ ID NO:2, or encoding a protein comprising an amino acid sequence having at least 95% identity to SEQ D NO:2. The Examiner contends that although one of skill could make the claimed sequence, a practitioner would not know how to use them. Although Applicants disagree for reasons of record, in the interest of expediting prosecution, claim 1 has been amended to recite an isolated *MEN1* gene that encodes a protein having the amino acid sequence of SEQ ID NO:2. The rejection as applied to the claims reciting at least 95% identity to SEQ ID NO:2 has therefore been obviated.

As noted above, the Examiner continues to allege that one of skill would not know how to use a nucleic acid that encodes SEQ ID NO:2, where the nucleic acid is not SEQ

ID NO:1 or SEQ ID NO:3. Specifically, the position taken by the Examiner is that because the examples in the specification show mutations in SEQ ID NO:1/3, that it would be unpredictable for one of skill to identify those nucleic acids encoding SEQ ID NO:2, other than SEQ ID NO:3/1, that are useful for diagnostic identification as disclosed in the specification. Applicants respectively traverse this rejection for reasons of record.

The specification clearly supports that one of skill could us an isolated nucleic acid encoding SEQ ID NO:2 as a diagnostic reagent. For example, such a probe could be used in a nucleic acid blot (*e.g.*, page 33, lines 23 bridging to page 34, line 3) to detect loss of heterozygosity (*e.g.*, page 33, lines 1-3) or a mutation that results in a truncated mRNA, such as the nonsense mutations detected in the patient analysis described in the examples section of the application. One of skill could generate any number of isolated nucleic acids that encode SEQ ID NO:2 for use in such a detection method, even taking into account codon degeneracy. The level of skill in this art is high, as acknowledged by the Examiner. The Examiner provides no evidence that such a use requires exactly SEQ ID NO:1 or SEQ ID NO:3. Indeed, one of skill could use nucleic acids that contain the (silent) polymorphic positions identified in the specification, as well as generate additional sequences for this purpose. Furthermore, as previously noted, such sequences can also be used to express protein, *e.g.*, to generate antibodies to menin for such purposes as evaluating menin levels and cellular distribution, in samples. Thus, based on the teachings in the specification, one of skill could make and use the claimed nucleic acid sequences.

The Examiner contends that Applicants are also arguing limitations that are not recited in the claims. The Office Action is not clear how this precisely relates to the current claims. Applicants respectfully request clarification, should this rejection be maintained.

In view of the foregoing, the claims are enabled. Applicants therefore respectfully request withdrawal of the rejection.

Rejection under 35 U.S.C. § 112, first paragraph-written description

Claims 1, 5, 30, 33, 36, and 37 are rejected as allegedly lacking adequate written descriptive support in the specification. To the extent that the Examiner believes that this

rejection would apply to the amended claims, Applicants respectfully traverse for reasons of record. Applicants have provided a structural hallmark that characterizes the claimed genus, as required by *Lilly* (cited by the Examiner). Furthermore, in the molecular biology arts, disclosure of an amino acid sequence is adequate to provide proper written descriptive support for the nucleic acid sequences that can encode the amino acid sequence. It is not necessary to provide an explicit disclosure of each nucleic acid sequence that can encode the amino acid sequence (*see, e.g.*, the MPEP at § 2163(II)(a)(3)(ii)). The claims therefore meet the requirements for written description. Applicants therefore respectfully request withdrawal of the rejection.

Rejection under 35 U.S.C. § 112, first paragraph--enablement and written description

Claims 19-24 and 26 are rejected as allegedly not providing enablement of a method of detecting the presence or absence of a mutation in a human *MEN1* gene comprising contacting the sample with a first oligonucleotide that distinguishes between a wildtype gene and a mutant form (section 5 of the Office Action). The claims are also rejected as allegedly not having proper written descriptive support in the specification for the reasons set forth in sections 6 and 7 of the Office Action. Although Applicants disagree, in the interest of expediting prosecution, claims 19-24 and 26 have been cancelled and new method claims 43-47 added. These claims relate to identifying the presence or absence of a mutation in a region of SEQ ID NO:3. Applicants believe that this amendment obviates all of the rejections in sections 5-7 and therefore respectfully request their withdrawal.

Rejection under 35 U.S.C. § 112, second paragraph-indefiniteness

Claim 30 was rejected over the recitation of "heterologous". Applicants have amended the claim to remove the term "heterologous", thereby obviating the rejection.

Rejection under 35 U.S.C. § 102(b)

Claims 1, 3-5, 30, 32, 36, and 37 are rejected as allegedly anticipated by Guru *et al.*, (*Mammalian Genome* 10:592-596, 1999). Applicants disagree for reasons of record.

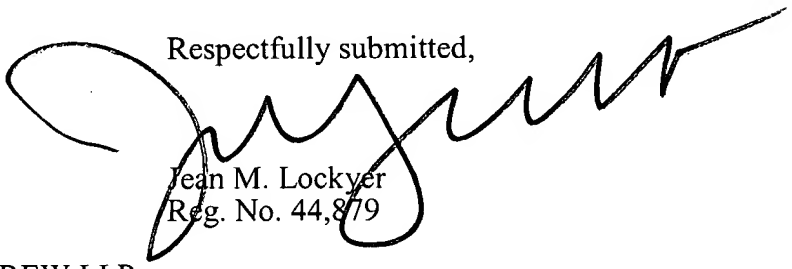
However, in order to expedite prosecution, claim 1 has been amended to recite an isolated *MEN1* gene. Applicants therefore respectfully request withdrawal of the rejection.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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